D.P.U. 92-232

Petition of Massachusetts Electric Company, under G.L. c. 40A, § 3, seeking exemption of a proposed electric substation from the zoning bylaw of the Town of Wilbraham.

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FOR: MASSACHUSETTS ELECTRIC COMPANY

Petitioner

I. INTRODUCTION

On October 13, 1992, Massachusetts Electric Company ("MECo" or "Company") filed a petition with the Department of Public Utilities ("Department") pursuant to G.L. c. 40A, § 3 for an exemption from the zoning bylaw of the Town of Wilbraham. According to its petition, the Company seeks the zoning exemption in order to construct, operate, and maintain a proposed expansion to an existing electric substation owned and operated by MECo. The subject property is located at the southwest corner of Main Street and Church Lane in Wilbraham (Exh. MEC-1, at 3-4) and situated in an area designated by Wilbraham's zoning bylaw as residential R-26 and in a Ground Water Protection District (Exh. DPU-1, Section 2.3). The petition indicates that the use, construction, operation, and maintenance of the proposed and related facilities may not conform to the uses permitted under Wilbraham's

zoning bylaw (Exh. MEC-1, at 1-2).[1] According to MECo, a substation has existed on the site since 1932 (Exh. DPU-2).

II. PROCEDURAL HISTORY

Pursuant to an Order of Notice duly issued on September 29, 1993, the Department conducted a public hearing on the Company's petition in the Town of Wilbraham on October 25, 1993. The Company offered the testimony of several witnesses in support of its petition: Donald R. Shapleigh, principal engineer, electrical stations engineering; Jennifer L. Grimsley, manager of district engineering; John McNiff, operations planner; David L. Therrien, senior environmental engineer; Richard E. Costa, engineer, transmission line engineering; Ken Coture, account manager; Joel McKinstry, arborist; James M. MacArthur, system arborist; and Deborah E. Weil, principal scientist, Bailey Research Associates, Inc. Area residents expressed concerns regarding

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[1] The Company seeks exemption from the following provisions of the Wilbraham zoning bylaw: Use Regulations (Exh. DPU-1, Section 3) (prohibiting inter alia electric substations to be located in a residential R-26 District); Single Dwelling Residence Districts (id., Section 4) (setting forth other limits for buildings located in R-26 Districts); Ground Water Protection District (id., Section 9.2) (limiting certain uses and operations in areas designated to be Ground Water Protection Districts); Landscaped Buffer Strips (id., Section 10.2); Earth Removal Regulations (id., Section 10.4); Special Permits (id., Section 13.6); Plans and Permits (id., Section 15.2.2).

the anticipated noise, location and size, and security of the proposed substation expansion (Tr. I, at 15-16, 17-23, 26-27).

No petitions for leave to intervene were submitted to the Department. On October 25, 1993, the Department conducted an evidentiary hearing relating to the Company's petition, during which the Department entered nine exhibits into the record and issued five record requests. MECo entered four exhibits into the record.

III. STANDARD OF REVIEW

In its petition for a zoning exemption, the Company seeks approval under G.L. c. 40A, § 3, which, in pertinent part, provides:

> Land or structures used, or to be used by a public service corporation may be exempted in particular respects from the operation of a zoning ordinance or by-law if, upon petition of the corporation, the [D]epartment of [P]ublic [U]tilities shall, after notice given pursuant to section eleven and public hearing in the town or city, determine the exemptions required and find that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public....

Under this section, the Company first must qualify as a public service corporation (see Save the Bay, Inc. v. Department of Public Utilities, 366 Mass. 667 (1975)), and establish that it requires an exemption from the local zoning by-laws. The Company then must demonstrate that the present or proposed use of the land or structure is reasonably necessary for the public convenience or welfare.

In determining whether a company qualifies as a "public service corporation" for purposes of G.L. c. 40A, § 3, the Supreme Judicial Court has stated:

> among the pertinent considerations are whether the corporation is organized pursuant to an appropriate franchise from the State to provide for a necessity or convenience to the general public which could not be furnished through the ordinary channels of private business; whether the corporation is subject to the requisite degree of governmental control and regulation; and the nature of the public benefit to be derived from the service provided.

Save the Bay, 366 Mass. at 680.

In determining whether the present or proposed use is reasonably necessary for the public convenience or welfare, the Department must balance the interests of the general public against the local interest. Save the Bay, supra, at 685-686; Town of Truro v. Department of Public Utilities, 365 Mass. 407 (1974). Specifically, the Department is empowered and required to undertake "a broad and balanced consideration of all aspects of the general public interest and welfare and not merely [make an] examination of the local and individual interests which might be affected." New York Central Railroad v. Department of Public Utilities, 347 Mass. 586, 592 (1964). When reviewing a petition for a zoning exemption under G.L. c. 40A, § 3, the Department is empowered and required to consider the public effects of the requested exemption in the State as a whole and upon the territory

served by the applicant. Save the Bay, supra, at 685; New York Central Railroad,

supra, at 592.

With respect to the particular site chosen by a petitioner, G.L. c. 40A, § 3 does not require the petitioner to demonstrate that its preferred site is the best possible alternative, nor does the statute require the Department to consider and reject every possible alternative site presented. Martarano v. Department of Public Utilities, 401 Mass. 257, 265 (1987); New York Central Railroad, supra, at 591; Wenham v. Department of Public Utilities, 333 Mass. 15, 17 (1955). Rather, the availability of alternative sites, the efforts necessary to secure them, and the relative advantages and disadvantages of those sites are matters of fact bearing solely upon the main issue of whether the preferred site is reasonably necessary for the convenience or welfare of the public. Id.

Therefore, when making a determination as to whether a petitioner's present or proposed use is reasonably necessary for the public convenience or welfare, the Department examines: (1) the present or proposed use and any alternatives or alternative sites identified (see Braintree Electric Light Department, D.P.U. 90-263, at

52-56 (1991); Southwestern Bell Mobile Systems, D.P.U. 89-110, at 3-5 (1989); Tennessee Gas Pipeline Company, D.P.U. 85-207, at 18-20 (1986)); (2) the need for, or public benefits of, the present or proposed use (see Tennessee Gas Pipeline Company, D.P.U. 91-197, at 11-12 (1992); Berkshire Gas Company, D.P.U. 91-204, at 11-12 (1992); Tennessee Gas Pipeline Company, D.P.U. 85-207, at 6-9 (1986)); and (3) the environmental impacts or any other impacts of the present or proposed use (see New England Power Company, D.P.U. 92-79/80, at 9-10 (1992); Southwestern Bell Mobile Systems, D.P.U. 89-110, at 5-6 (1989); Tennessee Gas Pipeline Company, D.P.U. 85-207, at 20-25 (1986)).

After examining these three issues, the Department balances the interests of the general public against the local interest, and determines whether the present or proposed use is reasonably necessary for the convenience or welfare of the public.

IV. DESCRIPTION

A. Need for the Proposed Project

The service territory of MECo includes a subterritory identified as the Monson Power Supply Area ("PSA"), comprised of the towns of East Longmeadow, Hampden, Palmer, Monson, Warren, Wilbraham, Ware,

Hardwick, Granby, Belchertown, Brimfield, Wales, and Holland (Exh. DPU-4, Att. 4A at 1-1, 2-1). The Company's principal distribution supply for the Monson Supply Area is provided by a 115 kV to 23 kV and 69 kV substation at Palmer and a 115 kV to 23 kV substation at Ware (id. at 2-1).[2,3]

The Company stated that the 1990 "Monson Area Supply and Distribution Study" ("Monson Study"), a copy of which was supplied to the Department by the Company, concluded that at the Palmer substation, the loss of either the No. 5 or No. 6 transformer (or associated 115 kV line) would result in the remaining transformer being loaded above its emergency capability (id. at 3). The Monson Study also concluded that the contingency loads on Palmer transformers No. 5 and No. 6 exceeded their emergency capability (id., Att. 4A, at 1-1).

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[2] Supplemental supply comes from the Five Corners substation operated by Western Massachusetts Electric Company ("WMECo") and from 13.2 kV distribution feeders in the town of Fiskdale and at Lashaway substation in North Brookfield (Exh. DPU-4, Att. 4A, at 2-1).

[3] The Company stated that the reliability standards set by its supply planning guidelines provide that facility loadings should remain within capabilities under foreseeable contingencies (Exh. MEC-2, at 2). The Company identified the loss of a transformer as an example of one such foreseeable contingency (id.).

The Company indicated that four circuits and associated substations serve the town of Wilbraham and are fed from the Palmer No. 5 and No. 6, 115/69/23 kV transformers (Exh. MEC-2, Att. JLG-7). Specifically, MECo serves the town of Wilbraham via two 23 kV circuits into the North Wilbraham substation, a 69 kV circuit into the Wilbraham substation, and a 69 kV circuit into the Hampden substation (id., Atts. JLG-8, JLG-9, JLG-10, JLG-12).[4] The Company stated that the above-mentioned loss of either transformer No. 5 or No. 6 would lead to overloading the capability of the Palmer substation (id. at 3). The Company identified the 23 kV load on these transformers as the chief factor limiting their emergency capability (id.). The Company asserted that the proposed upgrade of the Wilbraham substation was needed to transfer load from the 23 kV system to the 69 kV system, and that it was specifically needed in Wilbraham to supply increasing loads and improve reliability in that area (id.).

In support of its contention that a new substation was needed in Wilbraham due to load growth, the Company stated that the average annual load growth rate for Wilbraham customers over the period from 1983 to 1992 was 1.6 percent (id.). Referring to the Monson Study, the

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[4] The loads served by these substations are primarily in Wilbraham (Exh. MEC-2, Att. JLG-12). The Hampden substation, however, also serves significant load in Hampden and Monson (id.).

Company reported that, for the Monson PSA as a whole, the long-term base forecast rate of growth was 1.4 percent annually for 1994-2005 (id.). The Company asserted that the Monson Study assumptions for total load growth in the Monson PSA were still valid, noting that actual load growth from 1983 to 1993 was 3.6 percent per year compared to the load growth assumption of 3.3 percent per year used in the Monson Study (id. at 2, 3).[5]

B. The Proposed Project and Alternatives

MECo contends that the transmission system in the Palmer PSA presently carries loads above its intended limits (id. at 2, 3). In support of this contention, MECo submitted a study indicating that a majority of the 23 kV transmission system, which serves 43 percent of the load of the Palmer PSA, is normally loaded above its capability (Exh. DPU-4, Att. 4A at 1-1). As part of a plan to provide relief to the Palmer substation, to improve reliability in Wilbraham, and to supply increasing Wilbraham area loads, MECo proposes to reduce the 23 kV loading at the Palmer substation by transferring load from the 23 kV to the 69 kV system (Exh. MEC-2, at 3).

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[5] With regard to reliability, the Company stated its expectation that the average five-year frequency of outages would be reduced from 1.86 to 1.41 and that the duration of outages would be reduced from 203.30 to 154.88 minutes per year per customer served (Exh. MEC-2, at 3).

In order to produce the desired 23 kV load reduction at the Palmer substation, MECo proposes to install a new 69 kV to 13.2 kV transformer and two distribution feeder lines at the existing Wilbraham substation (id.).[6] The Company would then transfer the distribution load of the North Wilbraham substation to the 69 kV transmission system and the upgraded Wilbraham substation (id.). MECo stated that the upgrading of the Wilbraham substation would allow retirement of existing 23 kV and 4.16 kV equipment at the North Wilbraham and Wilbraham substations (id.).[7]

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[6] MECo specified that its proposed initial installation would consist of: a terminating structure to terminate the 69 kV line; a 69 kV to 13.2 kV transformer; a building, 39 by 35 square feet, which would initially contain switchboard equipment, circuit breakers and busses to provide two 13.2 kV distribution feeders; and a 13.2 kV capacitor bank (Exh. MEC-3, at 3). The Company stated that it would ultimately install additional equipment to complete the facilities as follows: a 69 kV circuit breaker and disconnect switches to sectionalize the 69 kV line; a second 69 kV to 13.2 kV power transformer; additional circuit breakers and busses within the existing building to provide a total of six 13.2 kV feeders; and a second 13.2 kV capacitor bank (id.). The Company has provided detailed information regarding its proposed initial installation only and the analysis, findings, and decision of the Department herein presented are, therefore, also confined to the proposed initial installation.

[7] Two 23 kV circuits supply 23 kV to 4.16 kV transformers and feeder lines at the North Wilbraham substation (Exh. MEC-2, Att. JLG-9). A 69 kV circuit supplies the present 69 kV to 4.16 kV transformer and feeder line at the Wilbraham substation (id., Att. JLG-8).

The Company indicated that as part of the 1990 Monson Study, it studied three alternatives in addition to the proposed project to address problems in the Monson PSA (id. at 4).[8] All of the alternative plans would upgrade and reinforce the existing 23 kV transmission system in the Wilbraham area, including the following common steps: (1) installation of a 23 kV to 13.2 kV transformer and an upgraded set of distribution feeders at the North Wilbraham substation;[9] and (2) upgrading/reconductoring of the No. 4, 23 kV line from the Palmer substation to the North Wilbraham substation (via Shearer's Corner) (id.). Under two of the alternative plans, Company's Plans No. 3 and No. 4, upgrading/reconductoring of the No. 4, 23 kV line would extend only as far as the North Wilbraham substation, while under the third alternative plan, Company's Plan 2, the upgrading/reconductoring of the No. 4 line would extend beyond North Wilbraham to Thorndike (id.).[10]

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[8] The Company presented only a segment of each of the three alternative plans. The Company stated that it was presenting the portion of the three alternative plans which would have a direct effect on Wilbraham (Exh. MEC-2, at 3). These alternative plans were in large part the same for the North Wilbraham/Wilbraham area (id. at 4, 5).

[9] The existing feeder line, Feeder 506L1, would be upgraded and a second 13.2 kV feeder line added (Exh. MEC-2, Att. JLG-9).

[10] The Company also provided information about installations at the Palmer substation that would be undertaken in connection with its alternative plans for Wilbraham and North Wilbraham.

(continued...)

The Company reported that it also considered two alternative sites for the proposed project on the existing 69 kV right-of-way in Wilbraham, but that proximity to wetlands rendered the first site unsuitable for building (Exh. DPU-3).[11,12] The Company concluded that the second alternative site was unsuitable for several reasons: (1) the possibility of wetlands impact; (2) lack of natural screening; and (3) greater construction cost (id.). Comparing the considered alternatives to the proposed Wilbraham site, the Company stated that the proposed site had been a substation since 1932, offered natural screening on all sides, involved no impacts to wetlands, and was the most economical of the siting options considered (id.).

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[10](...continued)
The Company indicated that additional work would be required but did not address steps that would be required with the proposed plan (Exh. DPU-4, Att. 4A at 4-1, 4-2). In comparing MECo's alternative plans with the proposed plan under this docket, the Company stated that it confined itself to an examination of the portions of each plan which affect Wilbraham directly (Exh. MEC-2, at 4).

[11] MECo indicated that, under the proposed project, electrical supply considerations dictated that the proposed new transformer be tied into the existing 69 kV transmission line passing through the Town of Wilbraham (Exh. DPU-3).

[12] The Company stated that Alternative Site 1, on the south side of Church Lane across from the existing substation, was transited by a brook along the back edge of the property (Exh. DPU-3). The Company noted that the same brook as well as a small pond at Alternative Site 2 might be impacted if the site were used for the proposed substation construction (id.).

C. Impacts of the Proposed Project

In accordance with its responsibility to undertake a broad and balanced consideration of all aspects of the general public interest and welfare, the Department examines the impacts associated with the proposed project to identify any significant impacts which would likely occur during construction and operation of the proposed project.

1. Electric and Magnetic Fields

MECo stated that the magnetic field levels at the perimeter of the Wilbraham substation would change as a result of the proposed project (Exh. MEC-2, at 5). The Company indicated that the magnetic field levels would increase on the eastern side of the substation where the 69 kV line enters the substation because more load would be supplied to the substation by the 69 kV line from that direction (id.).[13] The Company asserted that magnetic field levels would not change in the vicinity of the portion of the 69 kV transmission line which proceeds west from the Wilbraham substation to East Longmeadow substation because the loading on the line would not change as a result of the

[13] MECo testified that with the proposed restructuring of the Wilbraham substation the load flow between the Palmer substation and the Wilbraham substation would be increased (Tr. 2, at 15). The Company asserted that there would be a slight increase in electromagnetic ("EMF") field levels between the two substations as a result (id.).

proposed substation reconstruction (id. at 15). The Company testified that based on research to date, no cause-and-effect relationship had been established between magnetic field exposure and adverse health effects and that, therefore, no hazardous level for magnetic field exposure had been established (Tr. 2, at 20, 21).

The Company reported that it had measured magnetic field levels in the area of the existing substation under typical load conditions (Exh. DPU-8).[14] The Company stated that measurements were taken by its electrical lab personnel at all corner points of the substation on September 21, 1993 (Tr. 2, at 16). MECo reported that magnetic field readings at the eight locations where measurements were taken ranged from .8 mG at the northeast corner of the substation to 38.0 mG along the southern edge of the substation near Church Street, with measurements at the remaining six locations ranging from 1.0 mG to

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[14] The Company also provided EMF measurements taken inside and outside two residences near the existing Wilbraham substation (Exh. HO-2). MECo noted that higher magnetic field measurements at these residences were not specifically attributable to the substation (id.). Measurements taken outside the residence at 624 Main Street ranged from .3 milligauss ("mG") to 7.7 mG; measurements inside ranged from .2 mG to 156.0 mG, including measurements taken near appliances (id.). Measurements taken outside the residence at 648 Main Street ranged from 2.8 mG to 8.9 mG; measurements inside ranged from 1.1 mG to 14.1 mG, with no measurements taken near appliances (id.).

9.5 mG (Exh. DPU-8). The Company asserted that the 38.0 mG reading was associated with the 4.16 kV distribution feeder line leaving the substation at that location (Tr. 2, at 15, 16). The Company further asserted that, with removal of the 4.16 kV feeder line in the proposed plan, there would be no magnetic field at this location (id. at 24).

MECo also reported that it had calculated magnetic field levels, assuming summer peak loads, before and after the proposed substation reconstruction (Exh. DPU-8).[15] MECo indicated that it modelled magnetic field levels at the proposed reconstructed substation for the 69 kV overhead transmission line only (Tr. 2, at 18, 19).[16] The

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[15] The Company stated that, as part of its proposed changes to the substation, the two new 13.2 kV distribution feeder lines would be installed underground from the substation to the edge of the substation property on Main Street, where they would rise to the existing overhead system (Exh. DPU-8). The Company calculated that magnetic field levels one meter above the center line of the cables would be 21 mG under summer peak loading conditions assuming the following: peak load of 266 amperes per circuit; balanced three phase loading; two 1000 kcmil aluminum, cross-linked polyethylene insulated cables in 6-inch, concrete-encased PVC conduit; center line depth of 36 inches; conduit spacing of 17.25 inches; cradled cable configuration; and worst case random phase arrangement (Exh. HO-5). MECo asserted that, given the above-listed assumptions, magnetic field levels above the cables would drop off to background levels (.9 mG) within approximately 30 feet of the centerline (id.).

[16] MECo stated that it had calculated expected magnetic field levels under peak load conditions for the proposed project using a program called Enviro (Tr. 2, at 18). MECo noted that Enviro is

(continued...)

Company provided calculations of peak magnetic field levels for six locations at the edge of the right-of-way to the south of the substation, as well as calculations of the distances from the edge of the right-of-way at which peak magnetic field levels would diminish to 2.5 mG (Exh. HO-1).

The Company's calculations of peak magnetic field levels range from 5.85 mG to 34.60 mG for both the existing substation and for the substation after proposed reconstruction (Exh. DPU-8, Att. 8B).[17] For the existing substation, the Company's analysis indicated that peak magnetic fields diminish to 2.5 mG at a distance of 50 to 60 feet from the edge of the right-of-way (Exh. HO-1A). For the proposed project, the Company's analysis indicated that peak magnetic fields would decrease

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[16](...continued)
an Electric Power Research Institute ("EPRI") computer modelling program for EMF (id.). The Company asserted that Enviro is an industry standard for computer modelling of EMF calculations (id.). The Company stated that it accepts Enviro figures as realistic estimates of the EMF levels which would occur under peak conditions if the substation is built as proposed (id. at 18, 19).

[17] The Company's analysis showed changes in expected magnetic field levels ranging from a decrease of 3.4 mG to an increase of 6.42 mG with proposed reconstruction (Exh. DPU-8, Att. 8B). The Company indicated that magnetic field levels would increase by 1.85 mG and 6.42 mG, respectively, at each of two of the six locations calculated and that, at the other four locations, magnetic field levels would either remain the same or be reduced (id.).

to 2.5 mG at distances of 40 to 90 feet from the edge of the right-of-way (id.).[18]

2. Noise

MECo indicated that the average sound level of the existing transformer at the Wilbraham substation was measured in 1991 at 69 decibels ("dB") (Exh. DPU-6, Att. 6A). MECo projected that the proposed transformer would produce a noise level of 65 dB (Exh. MEC-3, at 4). The Company asserted that with the installation of a reduced-sound transformer, a sound barrier or sound wall would be unnecessary (Tr. 2, at 58). The Company stated that at the residence closest to the transformer location, approximately 210 feet away, operation of the proposed new transformer would result in a noise level of 33 dB (Exh. MEC-3, at 4). The Company indicated that this would be 2 dB below existing nighttime ambient noise at the same location (id.).[19]

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[18] Distances at which magnetic fields were calculated at levels of 2.5 mG or below were generally comparable for the existing substation and proposed project (Exh. HO-1A). Abutting residences are in all cases beyond the point where it is calculated that magnetic fields will be 2.5 mG or less (id.).

[19] The same study indicated that, at the residence closest to the Wilbraham substation, the average expected nighttime ambient noise level with operation of two transformers would be 37 dB (Exh. DPU-6, Att. 6A).

MECo testified that the noise level calculations it presented were based on the highest loading capability, i.e., with all available fans and pumps running (Tr. 2, at 47). MECo testified further that the occurrence of a high level of loading at a time of low ambient noise is unlikely (id.). The Company reported that the nighttime ambient noise in the vicinity of the Wilbraham substation is 35 dB and it submitted a study of audible noise conducted in November, 1992 in support of its contention (Exh. DPU-6, Att. 6A).[20] MECo stated its commitment to the principle that noise from the Wilbraham transformer not exceed ambient noise levels at any residence (Exh. MEC-3, at 4).

3. Construction and Traffic

MECo stated that construction on the proposed facility was expected to last five to six months (Exh. DPU-9). The Company also testified that construction activities would generally take place during normal working hours (Tr. 2, at 59).[21] The Company further stated that

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[20] MECo provided information on levels of common sounds, indicating that 40 dB is comparable to the noise made by a refrigerator or a small brook at 25 feet, 37-38 dB is comparable to the noise level of a quiet urban night, and 35 dB is comparable to the noise level of a quiet suburban night (Exh. HO-4A).

[21] The Company indicated that construction activities would take place between the hours of 7 a.m. and 5 p.m. (Exh. DPU-9). The Company testified that most, if not all, work would occur between 8:00 a.m. and 4:00 p.m. (Tr. 2, at 59).

any construction debris, including solid material, removed foundations, or gravel would be taken to an approved landfill site for disposal (Tr. 2, at 76).[22]

MECo acknowledged that heavy construction equipment including bulldozers, cement trucks, and cranes would be required at the site for two to three months, but that there would be no heavy equipment needed during the remaining two-to-three month period (Exh. DPU-9). The Company anticipated that heavy equipment would disrupt traffic only when brought to the construction site and again upon removal (id.).[23] MECo noted the relative proximity of a high school to the substation property, but testified that heavy equipment would not be moved in or around the area during periods when there might be high-school-associated traffic (Tr. 2, at 63). The Company stated that it would work with local officials as necessary to minimize traffic disruption (Exh. DPU-9).

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[22] The Company stated that the proposed site had been a substation since 1932 and that the proposed project involved no wetlands impacts (Exh. DPU-3). The Company submitted an Aquifer Protection District map for the Town of Wilbraham which indicated that the proposed site was not itself a wetland and was located in a zone bordering areas of till and bedrock outcrops (Exh. MEC-1, Map C).

[23] The Company noted that trucks carrying cement would make trips to and from the site, most likely daily, over approximately a 3-week period (Exh. DPU-9).

With regard to noise disruption due to construction activities, MECo testified that some disturbance to the local area would probably occur, but that noise would be comparable to that associated with the building of a new home (Tr. 2, at 60, 61). The Company added that a large part of the work would be "hand work," i.e., bolting equipment in place and making connections, and that such work would not be perceptible beyond substation property (id. at 62). MECo stated that the high school in the substation vicinity was at sufficient distance that noise impact from construction was not anticipated (id.).

4. Visual

MECo asserted that no visual disruption was anticipated during or after proposed reconstruction of the substation (Exh. DPU-9). In support of its contention that the substation site would be well-screened after construction, the Company submitted its proposed landscaping plan (id., Att. 6B). The Company stated that the proposed substation would be 35 feet high, the height of the existing substation structure (Exh. DPU-9).

The Company acknowledged that some trees and shrubs would be removed during construction (id.). However, the Company noted, that some of the trees to be removed currently enable unauthorized access to the substation over the fence surrounding the site and, therefore,

should be removed for safety reasons regardless of the proposed project (Tr. 2, at 74).

MECo asserted that it would retain undisturbed trees and shrubs and plant additional trees and shrubs capable of screening the substation after construction (Exh. DPU-9). The Company stated that the existing trees shielding the substation were approximately 30 feet high (Tr. 2, at 72, 73). MECo indicated that new trees to be planted along the fence would include six- to eight-foot arborvitaes, rhododendrons, and smaller shrubs, and that these together with existing cover would be sufficient to envelop the substation fence within three to five years (id. at 72, 74).[24,25] On the Main Street side of the substation, the Company specified that existing trees would be supplemented with additional trees for screening purposes (id. at 72).

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[24] The Company stated that, after expansion for the proposed project, the Wilbraham substation enclosure would be 100 feet by 117 feet (Exh. MEC-3, at 4). MECo added that a chain-link fence, seven feet high and topped with barbed wire, would follow the enclosure perimeter (id.). Inside this fence, the Company stated that it would install a second, eight-foot-high fence of solid wood in order to enhance the appearance of the site (Tr. 2, at 71).

[25] The Company also stated that it required a ditch to connect cable from the substation to existing transmission lines and that the ditch would be backfilled and its grass cover restored (Tr. 2, at 75).

MECo also testified that it had discussed landscaping with property owners in the substation vicinity (id.). The Company stated that it had agreed to screen the property of an abutter on Church Lane, possibly by planting hemlocks on her property (id.).

V. ANALYSIS AND FINDINGS

G.L. c. 40A, § 3, authorizes the Department to grant to public service corporations exemptions from local ordinances or bylaws if the Department determines that the exemption is required and finds that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public. MECo is an electric company as defined by G.L. c. 164, § 1, authorized to generate, transmit, and distribute electricity. Accordingly, the Company is eligible to petition the Department as a public service corporation for an exemption from local zoning bylaws, pursuant to G.L. c. 40A, § 3.

As mentioned in Section I, supra, the Company seeks exemptions from numerous zoning bylaws of the town of Wilbraham. Based on its review of these bylaws, the Department concludes that each of the bylaws could impede construction and implementation of the proposed substation expansion. Therefore, the Department determines that the Company's proposed additions and related facilities require the

petitioned exemptions from the zoning bylaws of the town of Wilbraham.

Next, the Department examines whether the Company's proposed use of the land and structures as set forth in its petition are reasonably necessary for the convenience or welfare of the public. MECo has demonstrated that the proposed expansion of the Wilbraham substation will improve MECo's ability to meet reliably the demand requirements of the Monson PSA. The record indicates that the proposed expansion will reduce or eliminate the possibility that the loss of either the No. 5 or No. 6 transformer or associated 115 kV line would result in the remaining transformer being loaded above its emergency capability. In addition, the record indicates that MECo considered a reasonable range of alternative projects in the process of developing a strategy for the Monson PSA to receive a reliable and efficient supply of electric power from MECo.

The record further indicates that the Company has considered possible environmental and land use impacts of the proposed Wilbraham substation that may be of concern to the surrounding community, including issues of EMF, noise, visual and traffic impacts. Further, as part of its consideration of possible environmental impacts, the Company met with residents in the vicinity of the Wilbraham

substation and agreed to work with the residents on an ongoing basis to develop and implement an acceptable, reasonable screening/landscaping plan.

Thus, with the implementation of the additional requirements as required in Section VI, infra, the Department finds that the general public interest in expanding the MECo substation, as indicated in its petition, outweighs the minimal impacts of the Company's proposed project on the local community.[26] Accordingly, the Department finds that the proposed additions and related facilities are reasonably necessary for the convenience and welfare of the public.

VI. ORDER

Accordingly, after due notice, hearing and consideration, it is hereby

ORDERED: That the petition of Massachusetts Electric Company be allowed and that the proposed additions and related facilities, as described in the Company's exhibits on file with the Department, be exempt from the operation of the following zoning bylaws of the town of Wilbraham, pursuant to G.L. c. 40A, § 3, to the extent that the

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[26] Given that the Company has stated its intent to install additional equipment at the Wilbraham substation but has not determined a start date or other essential specifics regarding the planned additions, the exemptions granted by this Order extend only to its proposed initial installation as described in fn.6.

additions and related facilities are used for electric power transmission purposes: Use Regulations (Section 3); Single Dwelling Residence Districts (Section 4); Ground Water Protection District (Section 9.2); Landscaped Buffer Strips (Section 10.2); Earth Removal Regulations (Section 10.4); Special Permits (Section 13.6); Plans and Permits (Section 15.2.2); and it is

FURTHER ORDERED: That the Company comply with the following requirements:

(1) That the Company shall take all necessary measures to ensure that the Wilbraham substation site is appropriately graded, and that all construction debris, including any site preparation and excavation debris, shall be removed from the site on or before completion of the proposed construction;

(2) That the Company's landscaping/screening plan be developed and implemented in concert with area residents and in a manner consistent with its submissions and representations in this case;

(3) That the Company shall take all necessary measures to preclude unauthorized entry of the Wilbraham substation, both during and after construction hours, and once construction is completed;

(4) That the Company shall provide to any resident in the Wilbraham substation area, upon request, EMF measurements, taken after the proposed project is completed and operational;

(5) That the Company shall take all necessary measures to ensure that construction equipment and materials do not arrive at the Wilbraham substation before 7 a.m. on any day;

(6) That the Company shall take all necessary measures to ensure that no interference or contamination with surface or ground water resources occurs during or after construction of the proposed substation expansion, and in such events, shall take immediately all mitigation and remediation measures necessary, including notification of appropriate authorities and residents, as warranted; and it is

FURTHER ORDERED: That the Company shall obtain all government approvals necessary for this project before its construction commences; and it is

FURTHER ORDERED: That the Secretary of the Department shall transmit a certified copy of this Order to the Town Administrator of the town of Wilbraham; and Massachusetts Electric Company shall serve a copy of this Order upon the Conservation Commission, Planning Board, and Board of Selectmen of the town of Wilbraham within five business days of its issuance and shall certify to the Secretary of the Department within ten business days of its issuance that such service has been accomplished.

By Order of the Department,